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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/602,875	06/25/2003	Masahito Honda	OHT-0018	2244

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EXAMINER

HANNON, CHRISTIAN A

ART UNIT	PAPER NUMBER
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2685

DATE MAILED: 10/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/602,875		HONDA, MASAHIRO	
	Examiner		Art Unit	
	Christian A. Hannon		2685	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 5-18 is/are rejected.
- 7) ☒ Claim(s) 3 and 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>12/15/2003</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 12/15/2003 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the examiner is considering the information disclosure statement.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 2, 5-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Arita et al (US 5,504,502).

Regarding claim 1, Arita et al teach a slide-type multi-directional input key comprising a key top (Figure 19, Item 10d) which has an upper portion protruding from an insertion hole (Figure 19, Item 19b) extending through an exterior member (Figure 19, Item 17 & 19) and a lower portion having a pushing member (Figure 19, Item 10) protruding downwardly therefrom and which is capable of sliding in the direction of a hole inner surface of the insertion hole and a plurality of contact input portions adapted

to effect input upon receiving pressure from the pushing member when the key top is caused to slide (Column 8, Lines 38-49; Figure 19, Item 14 & 14').

In regards to claim 2, Arita et al teach the slide-type multi-directional input key according to claim 1, further comprising a key sheet (Figure 19, Item 13) formed of a rubber-like resilient material and adapted to support the key top so as to allow the key top to slide from the initial position in the direction of the hole inner surface of the insertion hole and in the return direction toward the initial position, wherein the key sheet is firmly attached to the key top and the exterior member (Column 8, Lines 34-38). While the term 'sheet' usually implies a rectangle it does not necessitate a rectangular shape and the disc shaped key sheet of Arita et al reads on the claim.

Regarding claims 5 & 6, Arita et al teach the slide-type multi-directional input key according to claims 1 & 2, furthermore wherein the exterior member has on a back surface thereof a stopper protrusion for stopping the sliding of the key top before the key top comes into contact with the insertion hole (Figure 20 C). It is clear from figure 20 C that key top 10d does not come in contact with the insertion hole (Figure 19, Item 19b) and is in fact stopped by a stopper protrusion thereof exterior member part 19 of Figure 19.

In regards to claims 7 & 8, Arita et al teach the slide-type multi-directional input key according to claims 1 & 2, further comprising a central contact portion below the pushing member of the key top at an initial position thereof (Figure 19, Item 15).

Regarding claim 9, Arita et al teach the slide-type multi-directional input key according to claim 7, wherein when the key top is at a slide position, the bottom surface

of the pushing member is situated above the central contact portion so that the pushing member can effect input through both the contact input portions and the central contact portion (Figure 20 C; Column 8, Lines 59-67).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arita et al.

Regarding claims 10-13, Arita et al teach the slide-type multi-directional input key according to claims 1, 2, 5 & 7, respectively; however, Arita et al fail to teach in their fourth embodiment of the invention a ring-shaped outer-ring key top allowing multi-directional input. However in Arita et al's first embodiment of their invention shown in Figure 2, a ring-shaped outer-ring key top allowing multi-directional input is shown as Item 11, of said figure. It would have been obvious to combine these embodiments to give said fourth embodiment the aesthetic of a ring-shaped outer-ring key top to allow multi-directional input.

7. Claims 14-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arita et al in view of Lu (US 2003/0038780).

Regarding claims 14-18, Arita et al teach the slide-type multi-directional input key according to claims 1, 2, 5, 7 & 10 respectively; however, Arita et al fail to teach wherein

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the plurality of contact input portions are formed by a membrane switch composed of a base film with a plurality of lower contact portions, a flexible film with a plurality of upper contact portions corresponding to the lower contact portions, and a spacer film forming a predetermined gap between the base film and the flexible film. Lu teaches a plurality of contact input portions formed by a membrane switch composed of a base film (Figure 1, Item 1; Lu) with a plurality of lower contact portions (Figure 1, Items 13 & 14; Lu), a thin film (Figure 1, Item 2; Lu) with a plurality of upper contact portions corresponding to the lower contact portions (Figure 1, Items 22 & 23; Lu), and a spacer film forming a predetermined gap between the base film and the thin film (Figure 1, Item 4; Lu). Lu teaches instead of a flexible film a thin film circuit (Page 1, [0015]; Figure 1, Item 2; Lu) that obviously could be made flexible as rigidity breaks down with respect to thickness. It would have been obvious to modify Arita et al to include a plurality of contact input portions formed by a membrane switch composed of a base film with a plurality of lower contact portions, a flexible film with a plurality of upper contact portions corresponding to the lower contact portions, and a spacer film forming a predetermined gap between the base film and the flexible film, such as that taught by Lu in order to provide a means of locating the key top position.

Allowable Subject Matter

8. Claims 3 & 4 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 3, Arita et al teach the slide-type multi-directional input key according to claim 2, however, Arita et al and all other cited prior art fail to teach that wherein the key top is composed of upper and lower key top portions, between which the key sheet is sandwiched for firm attachment.

In regards to claim 4, Arita et al teach the slide-type multi-directional input key according to claim 2, however, Arita et al and all other cited prior art fail to teach wherein the key sheet includes an inclined portion spreading out from the portion firmly attached to the key top, and an arch-shaped curved portion formed by upwardly bending the inclined portion starting with its lower end portion and wherein the wall thickness of an erect wall portion in the outer periphery of the curved portion is larger than the wall thickness of an erect wall portion on the inner periphery thereof and that of the inclined portion.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Yasuda (US 5,012,230) discloses an input device for digital processor based apparatus.

Sakamaki et al (US 6,839,050) disclose a tactile interface device.

Yoshida (US 5,446,480) disclose an input device for entering data for electronic equipments and so forth.

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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christian A. Hannon whose telephone number is (571) 272-7385. The examiner can normally be reached on Mon. - Fri. 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Christian A. Hannon
October 11, 2005



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